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Indian Standard

SPECIFICATION FOR MUSSELS CANNED IN OIL

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Indian Standard

SPECIFICATION FOR MUSSELS CANNED IN OIL

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(*Continued on page* 2)

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Indian Standard

SPECIFICATION FOR MUSSELS CANNED IN OIL

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 30 December 1983, after the draft finalized by the Fish and Fisheries Products Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 Mussels an important soft shell fish are considered a delicacy in a number of western countries and, therefore, offer a considerable export potential. In order to ensure quality and wholesomeness of the finished product various physical, chemical, microbiological and hygenic requirements have been prescribed in this standard.

0.3 In preparation of this standard due consideration has been given to the provisions of the *Prevention of Food Adultration Act, 1954* and the rules framed thereunder. However, this standard is subject to the restrictions imposed under this act, wherever applicable.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for mussels canned in oil.

1.1.1 For the purpose of this standard the term 'mussels' shall apply to the following commercial species:

a) *Perna indica*	Brown mussel
b) *Perna viridus*	Green mussel

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*Rules for rounding off numerical values (*revised*).

2. REQUIREMENTS

2.1 General

2.1.1 *Shell Fish* — The mussels shall be of sound quality and free from any evidence of spoilage and degradation.

2.1.2 *Oil* — Only refined, pure, clear and deodorized edible vegetable oil having characteristic colour shall be used for canning mussels. The oil shall be free from any foreign matter or mineral oil and objectionable flavour and odour. *RBD Palm oil shall not be used.*

2.1.3 *Salt* — Edible salt conforming to IS : 594-1962* shall be used for canning.

2.2 Freedom from Artificial Colouring Matter and Firming Agents — The product shall be free from artificial colouring matter and firming agents except common salt.

2.3 Additives — No additive other than common salt shall be used.

2.4 Hygienic Requirements — The material shall be prepared, filled and processed under hygienic conditions and only in premises maintained in a thoroughly clean and hygienic manner [*see* IS : 4303 (Part 2)-1967†] and duly approved and licensed by the authorities concerned for fish products. The water used for processing of the fish shall be potable water, preferably conforming to IS : 4251-1967‡.

2.5 Material and Processing

2.5.1 The mussles shall be stored in clear sea water for 24 hours and then kept in clean potable water containing 5 mg/kg (ppm) of the chlorine for 2 hours. They shall be again cleaned and shall removed and flesh taken out.

2.5.2 The material shall have a good odour and flavour and retain a good colour characteristic of the species. The flesh shall be firm in texture and free from disintegration. The meet shall be free from pieces of shell, sand, byssus and other foreign material.

2.5.3 The mussles may be given a suitable brine treatment to ensure that the finished canned fish are firm in texture. Brine solutions shall be kept clean. The final saltiness of the pack shall be adjusted as to produce a palatable product.

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*Specification for common salt for fish curing (*revised*).

†Code of hygienic conditions for fish industry: Part 2 Canning stage (*first revision*).

‡Quality tolerances for water for processed food industry.

2.6 Processing — Mussels get quickly spoiled after they are taken out of water, even though properly iced. It shall, therefore, immediately be cooked for a few minutes in direct steam in order to open the shell. The meat shall then be oil packed and sterilized in containers.

2.7 Requirements for the Finished Product

2.7.1 *Disintegrated Units* — The contents of the can on opening shall not display any appreciable disintegration and the oil shall be clear. Pieces from which portions have separated out would be treated as disintegrated units. The percentage of detached portions of fish, calculated on the basis of the drained mass shall not exceed 5 percent by mass based on the average of 5 cans.

2.7.2 The canned mussel shall be of pleasant flavour characteristic of well-canned mussel. It shall be free from scorched, bitter, foreign or other objectionable flavour. It shall have no colour other than the characteristic colour of well-preserved mussel.

2.7.3 It shall be free from any foreign material and from grittiness.

2.7.4 The material shall be free from any type of poisonous or deleterious substances.

2.7.5 *Vacuum* — The can shall give a negative pressure when punctured. If round cans are used, the vacuum shall be not less than 100 mm of Hg.

2.7.6 *Drained Mass of the Contents* — The drained mass of the contents in each can shall be not less than 65 percent by mass of the water holding capacity of the can when tested by the method given in Appendix A of IS : 2421-1971*.

2.7.6.1 The drained liquid shall not contain more than 5 percent by volume of water.

NOTE — The drained liquid (*see* **2.7.6**) shall be collected in a measuring cylinder and kept for separating the oil and water. The volumes of oil and water shall be measured and percentage of water determined.

2.7.7 The material shall also satisfy the limits for heavy metals and microbiological activity prescribed in Table 1.

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*Specification for sardines (*Sardinella* sp.) canned in oil (*first revision*).

TABLE 1 LIMITS FOR HEAVY METALS AND MICROBIOLOGICAL ACTIVITY FOR MUSSELS CANNED IN OIL

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST, REF TO APPENDIX IN	
			IS : 1263-1971*	IS : 9808-1981†
(1)	(2)	(3)	(4)	(5)
i)	Arsenic, ppm, *Max*	1	B	—
ii)	Lead, ppm, *Max*	5	C	—
iii)	Copper, ppm, *Max*	10	D	—
iv)	Zinc, ppm, *Max*	50	E	—
v)	Tin, ppm, *Max*	250	F	—
vi)	Mercury, ppm, *Max*	0·5	—	H
vii)	Microbiological activity	To satisfy the requirements of the test	G	—

*Specification for pomfret canned in oil (*first revision*).
†Specification for fish protein concentrate.

3. PACKING AND MARKING

3.1 Packing — The material shall be packed in suitable containers and hermatically sealed. If the cans are lacquered the lacquer used shall be non-toxic and shall be of such quality that it does not impart any foreign taste and smell to the contents of the can and does not peel off during processing and storage of the product. The lacquer used shall not be soluble in oil or brine to any extent. The can shall be free from rust. The can shall be thoroughly cleaned before filling.

3.2 Marking — Each container shall be indelibly and legibly marked with the following information in addition to the information required under *Prevention of Food Adultration Act 1954* and the rules framed thereunder:

a) Name of material along with brand name, if any;
b) Name and address of manufacturer;
c) Net mass of the contents of can;
d) Drained mass of contents of can;
e) Batch or lot number and date of manufacture;
f) Nature of canning medium used and its ingredients; and
g) Other requirements in accordance with the *Weights and Measures (Packaged Commodities) Rules, 1977.*

3.2.1 Each container may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors may be obtained from the Indian Standards Institution.

4. SAMPLING

4.1 The method of drawing representative samples of the material for tests and the criteria for conformity shall be in according to the method prescribed in Appendix A.

5. TESTS

5.1 Test shall be carried out by appropriate method as referred in col 4 and 5 of Table 1.

5.2 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see* IS : 1070-1977*) shall be employed in test.

NOTE — ' Pure chemicals ' shall mean chemical that do not contain impurities which affect the result of analysis.

APPENDIX A

(*Clause* 4.1)

SAMPLING OF MUSSELS CANNED IN OIL

A-1. GENERAL REQUIREMENTS

A-1.1 Samples shall be stored in such a manner that the temperature of the material does not vary unduly from the normal temperature.

A-1.2 Samples may be tested at a laboratory agreed to between the purchaser and the vendor.

A-2. SCALE OF SAMPLING

A-2.1 Lot — In any consignment, all cans of the same size, belonging to the same batch of manufacture shall be grouped together to constitute a lot.

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*Specification for water for general laboratory use (*second revision*).

A-2.2 For ascertaining conformity of the material to the requirement of the specification, samples shall be tested from each lot separately.

A-2.3 The number of cans to be selected from a lot shall depend on the size of the lot and shall be according to Table 2.

TABLE 2 SCALE OF SAMPLING

NUMBER OF CANS IN THE LOT (1) *N*	NUMBER OF CANS TO BE SELECTED (2) *n*
Up to 300	5
301 to 1 000	10
1 001 to 3 000	15
3 001 and above	20

A-2.3.1 These cans shall be selected at random from the lot. In order to ensure the randomness of selection, procedures given in IS : 4905-1968* may be followed.

A-2.3.2 If the cans are packed in cases, at least 10 percent of the cases subject to a minimum of 2 shall be sampled at random and approximately equal number of cans taken from each selected packing case so as to constitute the requisite sample size (*see* Table 2).

A-3. NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

A-3.1 Vacuum and Visual Examination — Each of the cans selected from the lot according to **A-2.3** shall be first tested for vacuum **2.7.5** and then examined for visual requirements given in **2.7.1**, **2.7.3** and **2.7.4**.

A-3.1.1 The lot shall be declared as conforming to these requirements if none of the sample can fails to satisfy any of these requirements.

A-3.2 Drained Mass (*see* **2.7.6**) **Disintegrated Units** (*see* **2.7.1**) — The lot having been found satisfactory according to **A-3.1** shall be tested for these requirements.

A-3.2.1 The lot shall be deemed to have met the requirements for drained mass and disintegrated units if the average of the test results for 5 cans satisfies the relevant specification requirements.

NOTE — Whenever there are more than 5 cans, they shall be randomly distributed into groups of 5 cans each.

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*Methods for random sampling.

A-3.3 Metallic Impurities — The lot having met the requirements given in **A-3.1** and **A-3.2** shall be tested for arsenic, lead, copper, zinc, mercury and tin according to **2.7.7** of the specification on the basis of a composite sample prepared by mixing approximately equal quantity of the material from all the cans sampled from a lot.

A-3.3.1 The lot shall be declared as conforming to these requirements if all the test results on the composite sample meet the relevant requirements given in Table 1 of the specification.

A-3.4 Microbiological Activity — The lot having been found satisfactory according to **A-3.1**, **A-3.2** and **A-3.3** shall be finally tested for microbiological activity according to **2.7.7**.

A-3.4.1 *Incubation at 37°C* — Half (approx of the cans shall be incubated at 37°C for not less than 14 days and subjected to bacteriological examination.

A-3.4.2 *Incubation at 55°C* — The remaining half of the cans shall be incubated at 55°C for not less than 14 days and subjected to bacteriological examination.

A-3.4.3 For declaring the conformity of the lot to the microbiological requirements, all the test results obtained in **A-3.4.1** and **A-3.4.2** shall satisfy the requirements of the test.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	Unit	Symbol	Definition
Force	newton	N	1 N = 1 kg.m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2